

107TH CONGRESS
1ST SESSION

H. R. 101

To amend the Elementary and Secondary Education Act of 1965 to establish and expand programs relating to science, mathematics, engineering, and technology education, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 3, 2001

Mr. EHLERS (for himself, Mr. KOLBE, Mr. HORN, Mr. BACA, Mr. SANDLIN, Mr. CAMP, Mr. FILNER, and Mr. GIBBONS) introduced the following bill; which was referred to the Committee on Education and the Workforce

A BILL

To amend the Elementary and Secondary Education Act of 1965 to establish and expand programs relating to science, mathematics, engineering, and technology education, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the
5 “National Science Education Enhancement Act”.

6 (b) TABLE OF CONTENTS.—The table of contents for
7 this Act is as follows:

Sec. 1. Short title; table of contents.

Sec. 2. Findings.

Sec. 3. Assurance of continued local control.

TITLE I—AMENDMENTS TO THE ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965

Sec. 101. Support for mentoring activities for science, mathematics, engineering, and technology teachers.

Sec. 102. Expansion of Eisenhower National Clearinghouse.

Sec. 103. Summer Professional Development Institutes.

Sec. 104. Grants for teacher technology training software and instructional materials.

Sec. 105. Reservation for after-school activities.

Sec. 106. After-school science day care at community learning centers.

TITLE II—OTHER PROVISIONS

Sec. 201. Work-study amendments.

Sec. 202. Study.

Sec. 203. Report to Congress.

1 **SEC. 2. FINDINGS.**

2 The Congress finds the following:

3 (1) As concluded in the report of the Com-
4 mittee on Science of the House of Representatives,
5 “Unlocking Our Future Toward a New National
6 Science Policy,” which was adopted by the House of
7 Representatives, the United States must maintain
8 and improve its preeminent position in science and
9 technology in order to advance human under-
10 standing of the universe and all it contains, and to
11 improve the lives, health, and freedoms of all people.

12 (2) It is estimated that more than half of the
13 economic growth of the United States today results
14 directly from research and development in science
15 and technology. The most fundamental research is
16 responsible for investigating our perceived universe,

1 to extend our observations to the outer limits of
2 what our minds and methods can achieve, and to
3 seek answers to questions that have never been
4 asked before. Applied research continues the process
5 by applying the answers from basic science to the
6 problems faced by individuals, organizations, and
7 governments in the everyday activities that make our
8 lives more livable. The scientific-technological sector
9 of our economy, which has driven our recent eco-
10 nomic boom and led the United States to the longest
11 period of prosperity in history, is fueled by the work
12 and discoveries of the scientific community.

13 (3) The effectiveness of the United States in
14 maintaining this economic growth will be largely de-
15 termined by the intellectual capital of the United
16 States. Education is critical to developing this re-
17 source.

18 (4) The education program of the United States
19 needs to provide for 3 different kinds of intellectual
20 capital. First, it needs scientists and engineers to
21 continue the research and development that is cen-
22 tral to the economic growth of the United States.
23 Second, it needs technologically proficient workers
24 who are comfortable and capable dealing with the
25 demands of a science-based, high-technology work-

1 place. Last, it needs scientifically literate voters and
2 consumers to make intelligent decisions about public
3 policy.

4 (5) Student performance on the recent Third
5 International Math and Science Study highlights the
6 shortcomings of current K–12 science and mathe-
7 matics education in the United States, particularly
8 when compared to other countries. We must expect
9 more from our Nation’s educators and students if
10 we are to build on the accomplishments of previous
11 generations. New methods of teaching mathematics
12 and science are required, as well as better curricula
13 and improved training of teachers.

14 (6) Science is more than a collection of facts,
15 theories, and results. It is a process of inquiry built
16 upon observations and data that leads to a way of
17 knowing and explaining in logically derived concepts
18 and theories.

19 (7) Students should learn science primarily by
20 doing science. Science education ought to reflect the
21 scientific process and be object-oriented, experiment-
22 centered, and concept-based.

23 (8) Children are naturally curious and inquisi-
24 tive. To successfully tap into these innate qualities,

1 education in science must begin at an early age and
2 continue throughout the entire school experience.

3 (9) Teachers provide the essential connection
4 between students and the content they are learning.
5 High-quality prospective teachers need to be identi-
6 fied and recruited by presenting to them a career
7 that is respected by their peers, is financially and in-
8 tellectually rewarding, and contains sufficient oppor-
9 tunities for advancement.

10 (10) Teachers need to have incentives to remain
11 in the classroom and improve their practice, and
12 training of teachers is essential if the results are to
13 be good. Teachers need to be knowledgeable of their
14 content area, of their curriculum, of up-to-date re-
15 search in teaching and learning, and of techniques
16 that can be used to connect that information to their
17 students in their classroom.

18 **SEC. 3. ASSURANCE OF CONTINUED LOCAL CONTROL.**

19 Nothing in this Act may be construed to authorize
20 any department, agency, officer, or employee of the United
21 States to exercise any direction, supervision, or control
22 over the curriculum, program of instruction, administra-
23 tion, or personnel of any educational institution or school
24 system.

1 **TITLE I—AMENDMENTS TO THE**
2 **ELEMENTARY AND SEC-**
3 **ONDARY EDUCATION ACT OF**
4 **1965**

5 **SEC. 101. SUPPORT FOR MENTORING ACTIVITIES FOR**
6 **SCIENCE, MATHEMATICS, ENGINEERING, AND**
7 **TECHNOLOGY TEACHERS.**

8 (a) IMPROVING BASIC PROGRAMS OPERATED BY
9 LOCAL EDUCATIONAL AGENCIES THROUGH PROFES-
10 SIONAL DEVELOPMENT.—Section 1119(b)(1) of the Ele-
11 mentary and Secondary Education Act of 1965 (20 U.S.C.
12 6301(b)(1)) is amended—

13 (1) by striking “and” at the end of subpara-
14 graph (D);

15 (2) by striking the period at the end of sub-
16 paragraph (E) and inserting “; and”; and

17 (3) by adding at the end the following:

18 “(F) include mentoring programs focusing
19 on changing science, mathematics, engineering,
20 and technology teacher behaviors and practices
21 to help novice teachers develop and gain con-
22 fidence in their skills, to increase the likelihood
23 that they will continue in the teaching profes-
24 sion, and generally to improve the quality of
25 their teaching.”.

1 (b) DISSEMINATION OF MENTORING INFORMATION
2 BY EISENHOWER NATIONAL CLEARINGHOUSE.—Section
3 2102(a)(3)(C) of the Elementary and Secondary Edu-
4 cation Act of 1965 (20 U.S.C. 6622(a)(3)(C)) is amended
5 by striking “materials” and inserting “materials, includ-
6 ing information on model science, mathematics, engineer-
7 ing, and technology teacher mentoring programs,”.

8 (c) EISENHOWER PROFESSIONAL DEVELOPMENT
9 PROGRAM STATE APPLICATIONS.—Section 2205(b)(2) of
10 the Elementary and Secondary Education Act of 1965 (20
11 U.S.C. 6645(b)(2)) is amended—

12 (1) by striking “and” at the end of subpara-
13 graph (N);

14 (2) by striking the period at the end of sub-
15 paragraph (O) and inserting “; and”; and

16 (3) by adding at the end the following:

17 “(P) describe how the State will administer
18 a mentoring system to ensure consistent imple-
19 mentation of mentoring programs for science,
20 mathematics, engineering, and technology
21 teachers, provide a structure for local men-
22 toring program evaluation, provide technical as-
23 sistance to local mentoring programs, ensure
24 compliance by local mentoring programs with
25 State teacher training requirements, and pro-

1 vide incentives for local educational agencies to
2 take mentoring into consideration in assessing
3 instructional staff hiring needs.”.

4 (d) EISENHOWER PROFESSIONAL DEVELOPMENT
5 PROGRAM LOCAL ACTIVITIES.—Section 2210(b)(2) of the
6 Elementary and Secondary Education Act of 1965 (20
7 U.S.C. 6650(b)(2)) is amended—

8 (1) by striking “and” at the end of subpara-
9 graph (D);

10 (2) by striking the period at the end of sub-
11 paragraph (E) and inserting “; and”; and

12 (3) by adding at the end the following:

13 “(F) include mentoring programs focusing
14 on changing science, mathematics, engineering,
15 and technology teacher behaviors and practices
16 to help novice teachers develop and gain con-
17 fidence in their skills, to increase the likelihood
18 that they will continue in the teaching profes-
19 sion, and generally to improve the quality of
20 their teaching.”.

21 (e) ACCOUNTABILITY.—Section 2401(a) of the Ele-
22 mentary and Secondary Education Act of 1965 (20 U.S.C.
23 6701(a)) is amended by striking “part.” and inserting
24 “part, including the impact of State and local mentoring

1 programs on teaching quality and teacher retention
 2 rates.”.

3 **SEC. 102. EXPANSION OF EISENHOWER NATIONAL CLEAR-**
 4 **INGHOUSE.**

5 (a) ALLOCATION OF APPROPRIATED AMOUNTS.—
 6 Section 2003(b)(1) of the Elementary and Secondary
 7 Education Act of 1965 (20 U.S.C. 6603(b)(1)) is amended
 8 by striking “2103;” and inserting “2103, and
 9 \$10,000,000 shall be available to carry out subparagraphs
 10 (A), (F), and (G) of section 2102(b)(3);”.

11 (b) USE OF FUNDS.—Section 2102(b)(3) of the Ele-
 12 mentary and Secondary Education Act of 1965 (20 U.S.C.
 13 6622(b)(3)) is amended—

14 (1) in subparagraph (A), by striking “(includ-
 15 ing, to the extent practicable,” and inserting “(in-
 16 cluding”;

17 (2) in subparagraph (E), by striking “and” at
 18 the end;

19 (3) by amending subparagraph (F) to read as
 20 follows:

21 “(F) solicit and gather (in consultation
 22 with the Department, national teacher associa-
 23 tions, professional associations, and other re-
 24 viewers and developers of educational materials
 25 and programs) all qualitative and evaluative

1 materials and all programs, including full text
2 and graphics, for the Clearinghouse, review the
3 evaluation of the materials and programs, rank
4 the effectiveness of the materials and programs
5 on the basis of the evaluations, and distribute
6 the results of the reviews (in a short, standard-
7 ized, and electronic format that contains elec-
8 tronic links to an electronic version of the origi-
9 nal qualitative and evaluative materials), ex-
10 cerpts of the materials and links to Internet-
11 based sites, and information regarding on-line
12 communities of users to teachers in an easily
13 accessible manner, except that nothing in this
14 subparagraph shall be construed to permit the
15 Clearinghouse to directly conduct an evaluation
16 of the materials or programs; and”; and
17 (4) by adding at the end the following:

18 “(G) develop and establish an Internet-
19 based site offering a search mechanism to assist
20 site visitors in identifying information available
21 through the Clearinghouse on science, mathe-
22 matics, engineering, and technology education
23 instructional materials and programs, including
24 electronic links to information on classroom
25 demonstrations and experiments, teachers who

1 have used materials or participated in pro-
2 grams, vendors, curricula, and textbooks.”.

3 (c) CLEARINGHOUSE.—Section 2102(b) of the Ele-
4 mentary and Secondary Education Act of 1965 (20 U.S.C.
5 6622(b)) is amended by adding at the end the following:

6 “(9) EFFECTIVE USE OF TECHNOLOGY.—In re-
7 viewing evaluations of materials and programs under
8 this subsection the Clearinghouse shall give par-
9 ticular attention to the effective use of materials and
10 technology in science, mathematics, engineering, and
11 technology education.”.

12 (d) REPORT.—Not later than two years after the date
13 of the enactment of this Act, the National Academy of
14 Sciences, in conjunction with appropriate related associa-
15 tions and organizations, shall—

16 (1) conduct a study on the Eisenhower National
17 Clearinghouse and whether the provisions enacted in
18 the amendments made by this section have resulted
19 in the Clearinghouse becoming a more effective enti-
20 ty; and

21 (2) submit to Congress a report on the study,
22 including any recommendations of the Academy re-
23 garding the Clearinghouse.

1 **SEC. 103. SUMMER PROFESSIONAL DEVELOPMENT INSTI-**
2 **TUTES.**

3 (a) IN GENERAL.—Section 2211 of the Elementary
4 and Secondary Education Act of 1965 (20 U.S.C. 6651)
5 is amended by adding at the end the following:

6 “(d) SUMMER PROFESSIONAL DEVELOPMENT INSTI-
7 TUTES FOR TEACHERS.—

8 “(1) PROGRAM AUTHORIZED.—From amounts
9 made available to carry out this subsection, the Sec-
10 retary is authorized to make grants to State agen-
11 cies for higher education, working in conjunction
12 with the State educational agency (if such agencies
13 are separate), for activities described in paragraph
14 (3). Such grants shall be awarded on a competitive
15 basis that includes a peer review of the grant appli-
16 cations.

17 “(2) SUBGRANTS.—A recipient of a grant
18 under paragraph (1) shall carry out the activities de-
19 scribed in paragraph (3) by making subgrants to, or
20 entering into contracts or cooperative agreements
21 with, institutions of higher education, and nonprofit
22 organizations of demonstrated effectiveness, includ-
23 ing museums and educational partnership organiza-
24 tions, which must work in conjunction with a local
25 educational agency, consortium of local educational
26 agencies, or schools.

1 “(3) ALLOWABLE ACTIVITIES.—

2 “(A) IN GENERAL.—Each recipient of
3 funds under paragraph (2) shall use the funds
4 for the following:

5 “(i) The establishment and operation
6 of science, mathematics, engineering, and
7 technology summer institutes that provide
8 professional development to elementary
9 and secondary school teachers. Such insti-
10 tutes shall be content-based, build on
11 school year curricula, and focus only sec-
12 ondarily on pedagogy.

13 “(ii) To provide teachers with travel
14 expense reimbursement, a stipend, or class-
15 room materials related to such an insti-
16 tute.

17 “(iii) The establishment of a mecha-
18 nism to provide supplemental assistance
19 and follow up training during the school
20 year for summer institute graduates.

21 “(B) REQUIREMENTS FOR CURRICULA.—

22 The curricula referred to in subparagraph
23 (A)(i) shall be object-centered, experiment-ori-
24 ented, content-based, and grounded in current
25 research.

1 “(C) REQUIREMENTS FOR INSTITUTES.—

2 The summer institutes referred to in subpara-
3 graph (A)(i)—

4 “(i) shall be conducted during a pe-
5 riod of a minimum of two weeks;

6 “(ii) shall provide for direct inter-
7 action between students and faculty;

8 “(iii) shall have a component that in-
9 cludes use of the Internet; and

10 “(iv) shall provide for follow-up train-
11 ing in the classroom during the academic
12 year for a period of a minimum of three
13 days, which shall not be required to be
14 consecutive, except that—

15 “(I) if the program at the sum-
16 mer institute is for a period of only
17 two weeks, the follow-up training shall
18 be for a period of more than 3 days;
19 and

20 “(II) for teachers in rural school
21 districts, follow-up training through
22 the Internet may be used.

23 “(4) REVIEW OF APPLICATIONS BY NATIONAL
24 SCIENCE FOUNDATION.—The Secretary shall provide
25 each application for a grant under this subsection to

1 the Director of the National Science Foundation in
2 order that such applications may undergo the peer-
3 review process described in paragraph (5)(B), and
4 shall implement the recommendations of the Direc-
5 tor in awarding grants under this subsection.

6 “(5) REQUIREMENTS ON NATIONAL SCIENCE
7 FOUNDATION.—

8 “(A) IN GENERAL.—Each year, not later
9 than 6 months before the application deadline
10 for a subgrant, contract, or cooperative agree-
11 ment described in paragraph (2), the Director
12 of the National Science Foundation shall de-
13 velop a theme and structure for the summer in-
14 stitutes supported under this subsection. Such
15 applications shall address how funds will be
16 used in accordance with the theme and struc-
17 ture developed by the Director.

18 “(B) APPLICATION PEER-REVIEW PROC-
19 ESS.—The Director—

20 “(i) shall establish a peer-review proc-
21 ess for applications for grants received
22 under this subsection; and

23 “(ii) shall forward the applications se-
24 lected by the Director through such proc-
25 ess to the Secretary.

1 “(C) PRIORITY.—In making awards under
 2 paragraph (2)(A), a grant recipient shall give
 3 priority to applicants whose application includes
 4 an assurance that the applicant will use a cur-
 5 riculum that is three or four weeks in length.

6 “(6) OTHER REQUIREMENTS.—Paragraphs (2),
 7 (3), and (4) of subsection (a), and subsection (c),
 8 shall apply to recipients of funds under this sub-
 9 section in the same manner as such provisions apply
 10 to recipients of funds under subsection (a)(1).

11 “(7) CREDIT FOR PARTICIPATION.—Participa-
 12 tion in an institute supported under this subsection
 13 shall earn credit toward—

14 “(A) State continuing education require-
 15 ments for teachers; or

16 “(B) a post-baccalaureate degree program
 17 at an institution of higher education.”.

18 (b) FUNDING.—

19 (1) ALLOCATION OF APPROPRIATED
 20 AMOUNTS.—Section 2003(b)(2) of the Elementary
 21 and Secondary Education Act of 1965 (20 U.S.C.
 22 6603(b)(2)) is amended by striking “B;” and insert-
 23 ing “B, of which \$100,000,000, \$150,000,000,
 24 \$200,000,000, and \$200,000,000 shall be available

1 to carry out section 2211(d) for fiscal years 2001,
 2 2002, 2003, and 2004, respectively;”.

3 (2) RESERVATION OF FUNDS.—Section 2202(a)
 4 of the Elementary and Secondary Education Act of
 5 1965 (20 U.S.C. 6642(a)) is amended—

6 (A) in paragraph (1), by striking “and”;

7 (B) in paragraph (2), by striking the pe-
 8 riod at the end and inserting “; and”; and

9 (C) by adding at the end the following:

10 “(3) the amount made available under section
 11 2003(b)(2) to carry out section 2211(d).”.

12 **SEC. 104. GRANTS FOR TEACHER TECHNOLOGY TRAINING**
 13 **SOFTWARE AND INSTRUCTIONAL MATERIALS.**

14 Section 3134 of the Elementary and Secondary Edu-
 15 cation Act of 1965 (20 U.S.C. 6844) is amended—

16 (1) in paragraph (5), by striking “and” at the
 17 end;

18 (2) in paragraph (6), by striking the period at
 19 the end and inserting “; and”; and

20 (3) by adding at the end the following:

21 “(7) providing technology training software and
 22 instructional materials to teachers.”.

23 **SEC. 105. RESERVATION FOR AFTER-SCHOOL ACTIVITIES.**

24 Section 10904(a) of the Elementary and Secondary
 25 Education Act of 1965 (20 U.S.C. 8244) is amended—

1 (1) by striking “and” after the semicolon in
2 paragraph (2);

3 (2) by striking the period at the end of para-
4 graph (3) and inserting “; and”; and

5 (3) by adding at the end the following:

6 “(4) an assurance that if awarded a grant
7 under this part, the grant recipient shall use not less
8 than 5 percent of the amount received to provide
9 after-school day care services that focus on science
10 activities.”.

11 **SEC. 106. AFTER-SCHOOL SCIENCE DAY CARE AT COMMU-**
12 **NITY LEARNING CENTERS.**

13 Section 10905(3) of the Elementary and Secondary
14 Education Act of 1965 (20 U.S.C. 8245(3)) is amended
15 by striking “services.” and inserting “services, including
16 after-school day care services that focus on science activi-
17 ties for children in grades kindergarten through the sixth
18 grade.”.

19 **TITLE II—OTHER PROVISIONS**

20 **SEC. 201. WORK-STUDY AMENDMENTS.**

21 (a) **TECHNOLOGY TRAINING TREATED AS COMMU-**
22 **NITY SERVICE.**—Section 441(c) of the Higher Education
23 Act of 1965 (20 U.S.C. 2751(c)) is amended—

24 (1) in paragraph (1), by inserting “technology
25 training,” after “literacy training,”; and

1 (2) in paragraph (4)(A), by inserting before the
2 semicolon at the end the following: “, including tu-
3 toring teachers in the uses of classroom technology”.

4 (b) **ADDITIONAL SPENDING FOR TECHNOLOGY**
5 **TRAINING.**—Section 443(b)(2)(B) of such Act (20 U.S.C.
6 2753(b)(2)(B)) is amended—

7 (1) by striking “7 percent” and inserting “10
8 percent”;

9 (2) by inserting “(i)” after “shall ensure that”;
10 and

11 (3) by inserting after “requirement of this sub-
12 paragraph” the following: “, and (ii) at least 3 per-
13 cent of the total amount of funds granted to such
14 institution under this section for such fiscal year is
15 used to compensate students employed in technology
16 training or tutoring teachers in the uses of class-
17 room technology (or both),”.

18 **SEC. 202. STUDY.**

19 The Secretary of Commerce, in consultation with
20 other Government agencies, appropriate organizations,
21 and private businesses and corporations, shall conduct a
22 study of—

23 (1) the feasibility and effectiveness of various
24 incentives, including tax credits, for corporations
25 and businesses to provide—

1 (A) personnel with regular compensation
2 for time spent as volunteers engaged in the
3 technological training of teachers; and

4 (B) facilities for the provision of such
5 training of teachers;

6 (2) alternative methods of providing financial
7 support, through income tax credits, loan forgive-
8 ness, or otherwise, to individuals seeking training or
9 retraining in mathematics, science, and technology
10 education;

11 (3) the effectiveness of colleges and universities
12 in training teachers who are able to use technology
13 and able to integrate technology into lesson plans
14 and curricula, including distance learning;

15 (4) methods to coordinate a working alliance at
16 various levels of government between the business
17 and academic community; and

18 (5) additional means of improving the efficiency
19 of the technological training of teachers.

20 **SEC. 203. REPORT TO CONGRESS.**

21 Not later than one year after the date of the enact-
22 ment of this Act, the Secretary of Commerce shall trans-
23 mit to the Congress a report outlining the results of the
24 study conducted under section 202. Such report shall in-
25 clude proposals for a comprehensive approach to providing

1 technologically competent teachers to our Nation's schools.
2 With respect to any objectives described in paragraphs (1)
3 though (5) of section 202 that the Secretary determines
4 are feasible and effective, such report shall include a plan
5 for accomplishing such objectives.